

4-29-03  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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MAY 01 2003  
TECH CENTER 1600/2900

Applicants: Shi et al. Group Art Unit: 1617  
Serial No.: 09/438,206 Examiner: : Hui, San Mingr  
Filed: November 12, 1999 Docket No.: 290.00420101  
Confirmation No.: 9018

Title: TREATMENT TECHNIQUE FOR MAMMALIAN SPINAL CORD INJURY

Assistant Commissioner for Patents  
BOX RCE  
Washington, D.C. 20231

We are transmitting the following documents along with this Transmittal Sheet (which is submitted in triplicate):

- ☒ **Small entity status is entitled to be asserted in the above-identified application.**  
☒ An itemized return postcard.  
☐ A Petition for Extension of Time for \_\_ month(s) and a check in the amount of \$\_\_ for the required fee.  
☒ A Supplemental Information Disclosure Statement (2 pgs); a copy of 1 application; 1449 forms (15 pgs); and copies of 163 documents cited on the 1449 forms; and transmittal document (in triplicate).  
☒ A check in the amount of \$375, representing request for continued examination fee.  
☒ Other: Request for Continued Examination (RCE) Transmittal (1 page) and Fourth Request for Corrected Filing Receipt (14 pages, including copies of three previously requests (12 pages)).  
☒ Response to Office Action (11 Pages total, including Appendix A (3 pages))

Fee Calculation for Claims Pending After Amendment					
	Pending Claims after Amendment (1)	Claims Paid for Earlier (2)	Number of Additional Claims (1-2)	Cost per Additional Claim	Additional Fees Required
Total Claims				x \$9 =	
Independent Claims				x \$42 =	
One or More New Multiple Dependent Claims Presented? If Yes, Add \$140 Here →					
Total Additional Claim Fees Required					

Please consider this a PETITION FOR EXTENSION OF TIME for a sufficient number of months to enter these papers and please charge any additional fees or credit overpayment to Deposit Account No. 13-4895. Triplicate copies of this sheet are enclosed.

MUETING, RAASCH & GEBHARDT, P.A.

Customer Number: 26813



26813

PATENT TRADEMARK OFFICE

By: Victoria A. Sandberg

Victoria A. Sandberg

Reg. No.: 41,287

Direct Dial: 612-305-1226

Facsimile: 612-305-1228

CERTIFICATE UNDER 37 CFR §1.10:

"Express Mail" mailing label number: EV073736683US

Date of Deposit: 28 April 2003

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR §1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, BOX RCE, Washington, D.C. 20231.

By: Sam E. Ols

Name: SAM E. OLS ON

(SMALL ENTITY TRANSMITTAL UNDER RULE 1.10)



PATENT  
Docket No. 290.0042 0101

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Riyi SHI et al.	)	Group Art Unit:	1623
		)		
Serial No.:	09/438,206	)	Examiner:	Hui
Confirmation No.:	9018	)		
		)		
Filed:	12 November 1999	)		
		)		
For:	METHOD AND COMPOSITIONS FOR TREATING MAMMALIAN SPINAL CORD INJURIES			

#31  
HKO  
5-8-03

FOURTH REQUEST FOR CORRECTED FILING RECEIPT

Assistant Commissioner for Patents  
BOX RCE  
Washington, D.C. 20231

Sir:

Upon review of the Filing Receipt received from the U.S. Patent and Trademark Office in connection with the above-identified application, the following error was noted.

The priority information has been omitted. Please add the provisional application Serial No. 60/108,145, filed on November 12, 1998 to the U.S. Patent and Trademark Office's record. A copy of attempts by prior attorneys of record are enclosed, as is the undersigned attorney's attempt submitted 23 May 2002. Applicants respectfully request a corrected Filing Receipt.

**Fourth Request for Corrected Filing Receipt**

Page 2  
of 2

Applicant(s): Riyi SHI et al.

Serial No.: 09/438,206

Confirmation No.: 9018


Filed: 12 November 1999

For: METHOD AND COMPOSITIONS FOR TREATING MAMMALIAN SPINAL CORD INJURIES

If the Examiner has any questions regarding this submission, please contact Applicants' Representative at the below-listed telephone number.

**CERTIFICATE UNDER 37 C.F.R. 1.10:**

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SARA E. OLSON

"Express Mail" mailing label number:

EV 07373608345

Date of Deposit: 28 ~~March~~ April 2003

Respectfully submitted for

Riyi SHI et al.

By

Muetting, Raasch & Gebhardt, P.A.

P.O. Box 581415

Minneapolis, MN 55458-1415

Telephone (612)305-1220

Facsimile (612)305-1228

**Customer Number 26813**



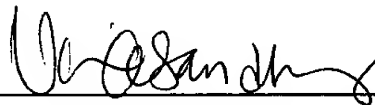
**26813**

PATENT TRADEMARK OFFICE

April 28, 2003

Date

By:



Victoria A. Sandberg

Reg. No. 41,287

Direct Dial (612)305-1226



PATENT  
Docket No. 290.0042 0101

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Riyi SHI et al.	)	Group Art Unit:	1623
		)		
Serial No.:	09/438,206	)	Examiner:	Hui
Confirmation No.:	9018	)		
		)		
Filed:	12 November 1999	)		
		)		
For:	METHOD AND COMPOSITIONS FOR TREATING MAMMALIAN SPINAL CORD INJURIES			

THIRD REQUEST FOR CORRECTED FILING RECEIPT

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BOX RCE  
Washington, D.C. 20231

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**COPY**

**Request for Corrected Filing Receipt**

Page 2 of 2

Applicant(s): Riyi SHI et al.

Serial No.: 09/438,206

Confirmation No.: 9018

Filed: 12 November 1999

For: METHOD AND COMPOSITIONS FOR TREATING MAMMALIAN SPINAL CORD INJURIES

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*Jacquelyn K. Torborg*  
**JACQUELYN K. TORBORG**  
"Express Mail" mailing label number:

EV073730782US

Date of Deposit: 23 May 2002

Respectfully submitted for

Riyi SHI et al.

By

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Minneapolis, MN 55458-1415

Telephone (612)305-1220

Facsimile (612)305-1228

**Customer Number 26813**



**26813**

PATENT TRADEMARK OFFICE

By:

*Victoria A. Sandberg*

Victoria A. Sandberg

Reg. No. 41,287

Direct Dial (612)305-1226

*May 23, 2002*  
Date

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# WOODARD, EMHARDT, NAUGHTON, MORIARTY & MCNETT

PATENT AND TRADEMARK ATTORNEYS

BANK ONE CENTER/TOWER  
111 MONUMENT CIRCLE, SUITE 3700  
INDIANAPOLIS, INDIANA 46204-5137

## FAX COVER SHEET

I hereby certify that this paper is being  
facsimile transmitted to the Patent and  
Trademark Office on the date shown below

Kim Richardson

Print name of person signing certification

Kim Richardson

Signature

November 17, 2000

Date

NO. OF PAGES: COVER SHEET PLUS 4 PAGE(S)

TO: USPTO Customer Service Center

FAX TELEPHONE NO.: 703-308-7751

FROM: Kim Richardson for Jason J. Schwartz

DATE: November 17, 2000

CONFIRMATION OF RECEIPT REQUESTED IF CHECKED. ☐

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SECONDARY FAX number: (317) 637-7587

SPECIAL REMARKS: Re: USPN 09/438,206 Filed Nov. 11/12/99 Riyi Shi et al.

Attached is a copy of the Petition for Corrected Filing Receipt that was sent to the Patent Office on March 21, 2000. Please add the parent provisional application's serial number and filing date on the filing receipt (60/108,145 filed November 12, 1998). Also, the word "Method" in the title of the application should be "Methods". If you have any questions concerning this request, please feel free to call the undersigned. Please send the corrected filing receipt at your earliest convenience to the attorney of record.

Thank you.

Kim Richardson

### THIS MESSAGE IS INTENDED ONLY FOR THE ADDRESSEE(S) IDENTIFIED ABOVE.

It may contain privileged, confidential, attorney work product, or trade secret information that is exempt from disclosure under applicable laws. If you are not the intended recipient, or an employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this message is strictly prohibited. If you have received this facsimile in error, please notify the sender immediately by telephone and return the facsimile (and all copies) to the sender by mail at the above address. The sender will reimburse you for reasonable expenses incurred. Thank you.

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UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTORNEY DOCKET NO.	DRWGS	TOT CL	IND CL
09/438,206	11/12/99	1623	\$843.00	7024-427-PUR	14	21	3

KENNETH A GANDY  
WOODARD EMHARDT NAUGHTON  
MORIARY & MCNETT BANK ONE CENTER/TOWER  
111 MONUMENT CIRCLE SUITE 3700  
INDIANAPOLIS IN 46204-5137

Receipt is acknowledged of this nonprovisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Customer Service Center. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts of Application" ("Missing Parts Notice") in this application, please submit any corrections to this Filing Receipt with your reply to the "Missing Parts Notice." When the PTO processes the reply to the "Missing Parts Notice," the PTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

Applicant(s) RIYI SHI, WEST LAFAYETTE, IN; RICHARD B. BORGENS,  
DELPHI, IN.

IF REQUIRED, FOREIGN FILING LICENSE GRANTED 12/13/99 \*\* SMALL ENTITY \*\*  
TITLE  
METHODS AND COMPOSITIONS FOR TREATING MAMMALIAN SPINAL CORD INJURIES  
PRELIMINARY CLASS: 514

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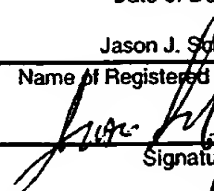
Woodard, Emhardt, Naughton,  
Moriary & McNett

DATA ENTRY BY: BATIE, MARGARET

TEAM: 01 DATE: 01/27/00

\*\*\*\*\*

(See reverse for new important information)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231 on	
December 11, 2000	
Date of Deposit	
Jason J. Schwartz	
Name of Registered Representative	
	
Signature	
December 11, 2000	
Date of Signature	

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re patent application of: )

Riyi Shi et al. )

Serial No. 09/438,206 )

Filed: November 12, 1999 )

METHODS AND COMPOSITIONS FOR )  
TREATING MAMMALIAN SPINAL )  
CORD INJURIES )

Group Art Unit 1623

December 11, 2000

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**SECOND**  
**PETITION FOR CORRECTED FILING RECEIPT**

Assistant Commissioner for Patents  
Washington, D.C. 20231  
ATTN: Office of Initial Patent Examination's Customer Service Center

Sir:

Please include the parent provisional application's filing date and serial number on the filing receipt in order to correctly reflect the parentage of this patent application. This information appears on the first page of the specification of this application, a copy of which is attached herewith for your convenience.

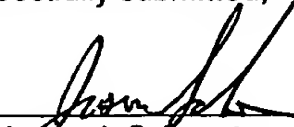


This same request was also made on November 17, 2000, and March 21, 2000,  
as evidenced by the documents included in this communication.

Please issue a corrected filing receipt for this application.

Respectfully submitted,

By

  
Jason J. Schwartz

Reg. No. 43,910

Woodard, Emhardt, Naughton,  
Moriarty & McNett

Bank One Center/Tower, Suite 3700  
111 Monument Circle  
Indianapolis, Indiana 46204-5137  
(317) 634-3456

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WASHINGTON, D.C. 20231  
www.uspto.gov

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTY DOCKET NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
09/438,206	11/12/1999	1614	843	7024-427-PUR	14	21	3

CORRECTED FILING RECEIPT

KENNETH A GANDY  
WOODARD EMHARDT NAUGHTON  
MORIARY & MCNETT BANK ONE CENTER/TOWER  
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INDIANAPOLIS, IN 462045137

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NOV 29 2000

Woodard, Emhardt, Naughton,  
Moriarty & McNett

Date Mailed: 11/20/2000

Receipt is acknowledged of this nonprovisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Customer Service Center. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the PTO processes the reply to the Notice, the PTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

Applicant(s)

RIYI SHI, WEST LAFAYETTE, IN ;  
RICHARD B. BORGES, DELPHI, IN ;

Continuing Data as Claimed by Applicant

Foreign Applications

If Required, Foreign Filing License Granted 12/13/1999

\*\* SMALL ENTITY \*\*

Title

METHODS AND COMPOSITIONS FOR TREATING MAMMALIAN SPINAL CORD INJURIES

Preliminary Class

514

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Data entry by : DUCKETT, GOIGA

Team : OIPE

Date: 11/20/2000



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7024-427: PUR-100:66597

## **METHODS AND COMPOSITIONS FOR TREATING MAMMALIAN SPINAL CORD INJURIES**

5 This invention was made with government support under grant number DAMD17-94-J-4242 awarded by the Department of the Army and grant number BES9631560 awarded by the National Science Foundation. The Government has certain rights in the invention.

### **CROSS-REFERENCE TO RELATED APPLICATIONS**

10 The present application claims the benefit of U.S. Provisional Application Serial Number 60/108,145, filed on November 12, 1998, which is hereby incorporated by reference in its entirety.

### **BACKGROUND OF THE INVENTION**

15 The present invention relates generally to methods for treating an injured spinal cord. Specifically, the invention relates to methods for treating an injured spinal cord that include contacting the spinal cord with a biomembrane fusion agent. Pharmaceutical compositions for treating an injured spinal cord are also described.

20 The devastating effects of injury to the mammalian spinal cord are not immediate. Severe mechanical injury initiates a delayed destruction of spinal cord tissue producing a loss in nerve impulse conduction associated with a progressive local dissolution of nerve fibers (axons) [Honmou, O. and Young, W. (1995) *The Axon* (Waxman, S.G., et al., Eds.) pp. 480-529, Oxford University Press, New York; Griffin, J.W. et al. (1995) *The Axon* (Waxman, S.G., et al., Eds.) pp. 375-390, Oxford University Press, New York]. This loss of sensory and motor communication across the injury site  
25 can produce a permanent paralysis and loss of sensation in regions below the level of the spinal injury. Furthermore, it is clear the most damaging effects of progressive "secondary injury" [Young, W. (1993) *J. Emerg. Med.* 11:13-22] of spinal cord parenchyma relative to the loss of behavioral  
30

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231 on March 21, 2000

Date of Deposit

Jason J. Schwartz

Name of Registered Representative

Signature

Date of Signature

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of: )

Riyi Shi et al. )

Serial No. 09/438,206 )

Filed: November 12, 1999 )

METHODS AND COMPOSITIONS FOR )  
TREATING MAMMALIAN SPINAL )  
CORD INJURIES )

Group Art Unit 1623

March 21, 2000

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### PETITION FOR CORRECTED FILING RECEIPT

Assistant Commissioner for Patents

Washington, D.C. 20231

ATTN: Office of Initial Patent Examination's Customer Service Center

Sir:

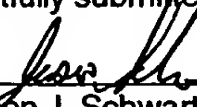
Please include the parent provisional application's filing date and serial number on the filing receipt in order to correctly reflect the parentage of this patent application. This information appears on the first page of the specification of this application, a copy of which is attached herewith for your convenience.

Also, please note that "METHOD" in the title of this application, as it currently appears on the filing receipt, should be "METHODS". This can also be found on the first page of the attached patent application's specification.

Please issue a corrected filing receipt for this application.

Respectfully submitted,

By

  
Jason J. Schwartz

Reg. No. 43,910

Woodard, Emhardt, Naughton,  
Moriarty & McNett

Bank One Center/Tower, Suite 3700

111 Monument Circle

Indianapolis, Indiana 46204-5137

(317) 634-3456

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7024-427:PUR-100:66597

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Patent and Trademark Office  
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Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTORNEY DOCKET NO.	DRWGS	TOT CL	IND CL
09/438,206	11/12/99	1623	\$843.00	7024-427-PUR	14	21	3

KENNETH A GANDY  
WOODARD EMHARDT NAUGHTON  
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INDIANAPOLIS IN 46204-5137

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PRELIMINARY CLASS: 514

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Woodard, Emhardt, Naughton,  
Moriarty & McNett

DATA ENTRY BY: BATIE, MARGARET

TEAM: 01 DATE: 01/27/00

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(See reverse for new important information)